MOTHS OF THE MONTHS

AND HOW TO IDENTIFY THEM

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S. N. SEDGWICK, M.A.

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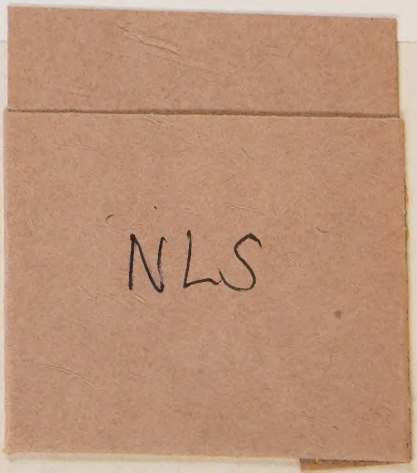

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LARVAE.

1. LARGE GARDEN WHITE BUTTERFLY. 2. PEACOCK BUTTERFLY.
3. GOAT MOTH. 4. OAK EGGAR MOTH.
5. PRIVET HAWK MOTH.

Frontispiece.

MOTHS OF THE MONTHS

And How to Identify Them

BY

S. N. SEDGWICK, M.A.

AUTHOR OF

'THE YOUNG PEOPLE'S NATURE-STUDY BOOK'
'THE YOUNG PEOPLE'S MICROSCOPE BOOK'
'IN NATURE'S NURSERY,' &c., &c.

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MOTHS OF THE MONTHS

AND HOW TO IDENTIFY THEM

CHAPTER I

When I say that there are more than 2,000 species of moths in Great Britain, my readers will understand that it is quite impossible to deal adequately with them in the space at my disposal, and I must content myself with attempting to describe the commoner species which the amateur naturalist is likely to encounter on his walks abroad.

A large number of these only fly by night, though some, such as the Clearwings, are fond of daylight; and many others may be captured during the daytime by beating bushes, herbage, and the lower branches of trees in which it will be found they have taken their siestas.

For the rest, much can be done in two ways: first, by collecting their larvae and rearing them at home in bottles and other cages;

second, by 'sugaring' trees and fences after dark, and capturing the moths which come to drink the refreshment provided for them.

The larvae can be obtained during daylight. Almost every bush and clump of herbage is bound to contain one species or another, which diligent search will discover. Or they may be shaken from their hiding-places into a cloth—or an open umbrella—and thus taken home to rear. Or the full-grown females which are captured may be kept in imprisonment until they have laid their eggs. Care, of course, should be taken to observe the food-plant upon which the larvae are found, that fresh supplies of it may be given to the captives. Nettle, sallow, privet, verbena, honeysuckle, &c., are some of the commoner food-plants.

Almost any kind of a box or bottle will suffice for a rearing-cage. Whatever the receptacle, it should be covered with a piece of fine perforated zinc or gauze, and should contain a small bottle holding water, in which sprigs of the food-plant can be kept fresh.

Details of the way to make such cages may be found fully described in *The Young People's Nature-Study Book*. Those who are enthusiastic photographers will find a large field of great interest open to them in the photography of different species in all stages of their development, from the egg up to the perfect insect.

FIG. 1.—LIFE-HISTORY OF THE VAPOURER MOTH.

The life-history of the Vapourer Moth (p. 9) is an illustration of what may be done in this way. See also p. 11.

Care should be taken to remove the stale leaves from the cage when the fresh food is introduced, which may be once a day. On no account should the larvae be forced from their hold on to the new leaves. If the whole of the old food is taken out first, and then the new placed in position, and the old twigs and leaves put back on the top, within a little time the larvae will have left their position and crawled down upon the fresh food, when the old may be completely removed.

It is well also to put a little mould, or moss, or fibre at the bottom of the cage, for the larvae to use when about to change into the chrysalis or pupa.

Do not overcrowd the cages with larvae. Strange things may happen if you do: the Puss Moth larvae, for example, will start eating each other's tails!

At the end of summer, and during the autumn, full-fed larvae are often to be found crossing paths and roads at the foot of trees, &c., seeking for a place to burrow for their winter sleep. These should be taken home, and a suitable box provided for them.

It is possible to find the pupae of many moths, if you know where to look for them.

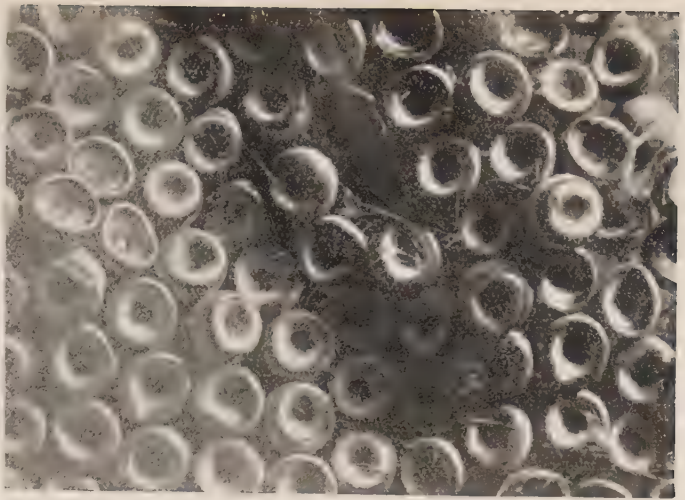

FIG. 2.—CLUSTER OF EGGS OF VAPOURER MOTH.

Such trees as poplar, willow, oak, elm, are certain to be the hiding-places of some. Trees which stand alone, or on the outskirts of woods or the banks of streams, yield richer finds than others. In the crevices of the bark, behind loose or decayed pieces, in clumps of moss, the débris of dead leaves, among the roots, three or four inches below the surface in dry soft soil—all these are places where finds may be expected, and experienced entomologists tell us that, generally speaking, the majority of discoveries will be made on the north side of trees, because that is the side sheltered most from rain and sunshine, both of which are unhealthy for pupae.

In going on a moth-catching expedition, a good net is required, some small boxes—preferably with glass tops—a poison-bottle or box, and a store box, lined with cork. Many moths found sleeping on trees or fences may be taken at once in a 'pill-box,' putting the open box close to the moth, and sliding the lid over it. As moths generally are torpid during the day, species captured in this way may generally be taken home alive; but with those which are wild and vigorous, it is necessary to use the poison-bottle at once. Moths have, as a general rule, such large bodies that the simple plan of killing by pinching the thorax is out of the question. A bottle containing

freshly crushed laurel leaves is quite effective, or the ordinary 'cyanide' bottle can be procured. Details of making this may be found in the book above referred to. A large pickle bottle, fitted with a lever cork, makes, to my mind, one of the best and cheapest bottles for this purpose. A third method of killing is to have a small phial of chloroform, and to place a drop or two upon a tuft of cotton-wool in the pickle-bottle before inserting the moth.

For night work, one of the most interesting of pursuits, the nature student must take out with him a bottle of sugaring mixture. A thick syrup is made of sugar and boiling water —or treacle will serve—in which a little rum or beer is mixed. This is spread with a brush on trees or palings just after sunset. A dark night should be chosen after a shower, and the months of June to September are the most productive. Then a tour of the places which have been thus baited will, if the night be propitious, disclose many different species, some overcome by the food, others attacking it with avidity. Take care that the sugar mixture is strong smelling, as it is the scent which attracts.

A hunt at night with a lantern round sweet-smelling flowers and blossoms will frequently result in other finds. One of the common

pocket electric lights is par excellence the best kind of lamp to choose.

In ' setting ' moths there are two difficulties to be faced. The first is that a large number of species are very small and fragile, and only the finest pins must be used ; others are too small for pins, and must be gummed on to card, the legs and wings being laid out with the aid of a needle and the thinnest gum. The second is that the larger species have stout and ' greasy ' bodies ; the result being that unless steps are taken to prevent it, they either shrivel up till they lose their shape entirely, or they ' exude ' a kind of fatty matter, which spreads over the body and wings and looks as if the specimen had been oiled all over. In the former case, the only way out is to *stuff* the body. Cut the abdomen off at the waist, remove the contents with a bent pin and a small paint-brush, and stuff it with cotton-wool. If a drop or two of 10% formalin solution be put on the wool, it will act as a preservative. When dry the abdomen may be put back in its rightful position with a little seccotine: and this may be done so neatly that no one can tell that it has been removed. In the latter difficulty, the plague of ' grease ' may be stopped by putting the specimen bodily into methylated spirits or benzoline, and letting it remain there a few hours. If, after it has been

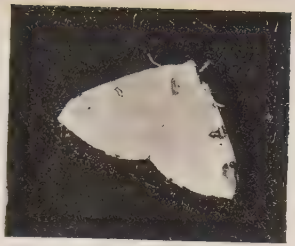

FIG. 3.
BRIMSTONE MOTH.

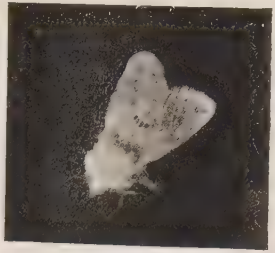

FIG. 6.—BUFF ERMINE MOTH.

FIG. 5.
LEG OF CLOTHES-MOTH.

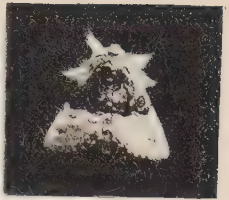

FIG. 4.
NUT-TREE TUSSOCK MOTH.

FIG. 7.
WHITE WAVE MOTH.

removed, it is left in the open air, the liquid evaporates, and the moth is restored to its original appearance.

NOTE.—The author desires to acknowledge his indebtedness to the following books: *Country Queries and Notes*; Morris's *British Moths*; Kirby's *Butterflies, Beetles, Moths*; and Furneaux's *The Out-Door World*.

CHAPTER II

The Classification of Moths

Moths and Butterflies belong to the Lepidoptera, or scale-winged insects, so called because their wings are covered with minute scales or 'feathers,' most exquisite and brilliant objects under the microscope. The 'bloom' or powder which is rubbed off on touching a wing is found to consist of thousands of these scales. It follows, therefore, that in collecting specimens, the greatest care must be taken not to disturb this plumage ; and that is why specimens bred and reared in cages are generally to be preferred to those caught on the wing.

A microscope or pocket lens is almost an essential in moth-hunting, and it will frequently reveal beauties hidden from the naked eye on moths that appear dull and dowdy in colour and markings.

The moths are known as Heterocera, as distinguished from the butterflies or Rhopalocera; and the difference between them consists noticeably in the shape of the antennae, which in moths are variable in form, whilst in butterflies they are always tipped with a ball or club. In addition, a moth when at rest lies with its wings expanded; a butterfly at rest carries its wings elevated and back to back. There are nine principal groups of British Moths, of which the table below gives some of the chief families.

SPHINGES

So called from the fancied resemblance of the larvae to the Sphinx.

Sphingidae, including the largest moths: stout bodies, long narrow wings, such as the Hawk Moths and Death's Head.

Aegeriidae, the larvae of which feed *inside* plant stems and trees, and may be called 'Woodborers': the wings are more or less transparent. The 'Clearwings' belong to this family.

Zygoenidae, small species, shortish horns, long wings—daylight fliers—such as the Burnets and Foresters.

BOMBYCES

Arctiidae include the Tiger Moths and Ermines.

Lithosiidae, to which the Footmen moths belong, generally are of pale hues, and fold their wings over one another.

Liparidae: the males have 'pectinated' antennae. The larvae are characterized by tufts of stiff hair. Gold-tail and Brown-tail, Vapourer and Satin, are good examples.

FIG. 8.
PEBBLE PROMINENT MOTH.

FIG. 10.—EYED HAWK MOTH.

FIG. 9.
HUMMING-BIRD HAWK MOTH.
Note the long proboscis.

FIG. 11.—LARVA OF TIGER MOTH.

FIG. 12.—A PERFECT TIGER MOTH, AND PUPA-CASE FROM WHICH IT EMERGED.

Pyschidae, the larvae of which live in *cases*, like the well-known Caddis.

Notodontidae, large brown or whitish species, with larvae of very curious shapes, such as Puss Moth, Buff-tip.

Saturniidae, to which the Emperor Moth alone belongs, amongst British species.

Endromidae, to which the Kentish Glory belongs.

Lasiocampidae, large reddish or yellowish moths, bodies thickly furred, such as Oak Eggar, Drinker, Lackey.

Zeuzeridae, of which the Goat Moth is the commonest species; others are Reed Moth and Wood Leopard.

Hepialidae, the Swifts, of which the Ghost Moth forms a typical species.

NOCTUAE

A very large group, of over 300 species, of which only a few families can be given. All night-fliers, full bodied, antennae long and slender.

Cymatophoridae, such as the Peach Blossom.

Apamidae, e.g. the Dark Arches and the Cabbage Moths.

Agrotidae,	containing	the	Yellow Underwings, &c.
Acronyctidae	„	„	Dagger Moths, &c.
Leucanidae	„	„	Wainscots.
Taeniocampidae	„	„	Quakers.
Xylinidae	„	„	Sharks, &c.
Plusidae	„	„	Gamma Moth, &c.
Amphipyridae	„	„	Copper Underwing, &c.
Toxocampidae	„	„	Old Lady, &c.
Calocalidae	„	„	Red Underwing.

Deltoidae, so called because their wings when folded take the form of the Greek Delta Δ, containing the Snout, Fan Foot, &c.

FIG. 13.—TIGER MOTH AND EGGS.

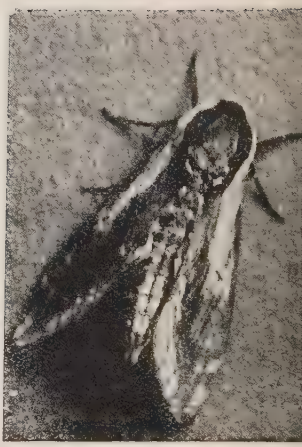

FIG. 15.—PRIVET HAWK MOT

FIG. 14.—DEATH'S-HEAD MOTH.

FIG 16.—PRIVET HAWK MOTH.

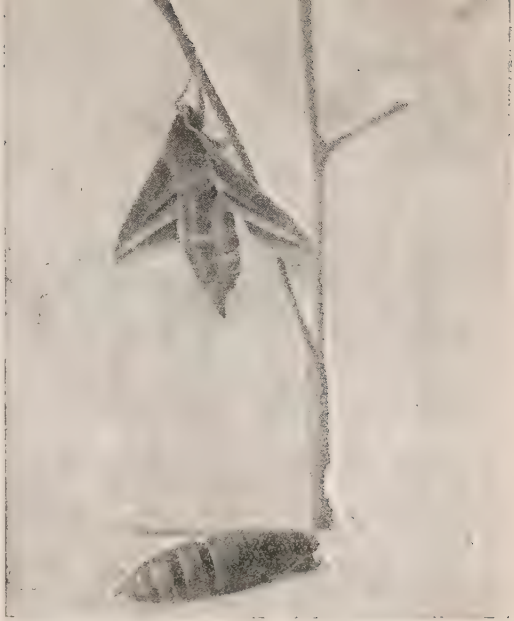

FIG. 17.—ELEPHANT HAWK MOTH EMERGING FROM PUPA-CASE.

FIG. 18.—CONVOLVULUS HAWK MOTH.

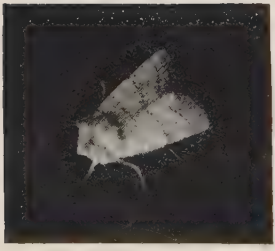

FIG. 19.
TREBLE LINES MOTH.

FIG. 20.
SCALLOPED HAZEL MOTH.

Geometrae

Nearly 300 species. Loopers, so called from the method of looping itself which the larva adopts in walking, due to the arrangement of the legs—six in front, four behind. The Magpie, Swallow Tail, and Brimstone, belong to this group.

Dendrometridae, Thorns, Emeralds, Waves, &c.

Phytometridae, Carpets and Pugs.

Pyrales

Small moths with broad, rounded wings.

Pyralidae, Meal Moth, Tabby, &c.

Botydae, containing the Pearl Moths.

Phycidae, containing the Knot Horns.

Crambidae, containing the Grass Moths and Veneers.

Tortrices

Or Bell Moths, so called from the bell-like appearance of the wings when folded, are all small : the larvae live in rolled-up leaves or the heads of flowers, or in fruit.

Tineae

(Or 'Clothes Moths'), a very large group of small moths, including nearly a third of the total number of British species. Only a few groups are given.

Tineidae, the Clothes Moths. (See p. 15.)

Adelidae, very long antennae : Long Horns.

Hyponomentidae, small Ermine Moths, the larvae of which are gregarious.

Gelechidae, Flat Bodies.

Coleophoridae, Small Case-Bearers.

Elachistidae, Grass-Miners.

Lithocolletidae, Leaf-Miners.

Nepticulidae, Leaf-Miners.

Pterophori

Consisting of the Plume Moths. See p. 55.

ALUCITAE

Of which the Twenty Plume Moth is the only British species.

Note.—The above list is founded upon the fuller classification in Kirby's *Butterflies, Moths, and Beetles.*

CHAPTER III

A Simple Classification

As previously noted, it would be impossible to deal fully with the 2,000 odd species of British Moths in this pocket-book; and all that can be attempted must be to describe some of the commoner species, and so lead on those who are interested to larger and more scientific works on the subject.

It would be equally useless, or so it seems to me, to take each of the nine great groups and select certain species out of them for detailed notes; and it occurs to me that a more direct, if rough-and ready, way of dealing usefully with a subject so vast will be to take the *common moths of the months*, and describe them. In this way, I hope, it may be possible to help a student to identify any common moth he finds, from the month in which he finds it. At any rate he will be spared having to hunt through a whole book before he lights on *Cheimatobia Brumaria* (Larentidae) for example, for having caught it at his window after

dark on a mild night in *December*, he will be able to turn to the section on that month, and the photograph on page 31, to see whether I have figured his specimen or not.

One point, however, must be borne in mind, in making use of a monthly classification. The months named represent the *principal* month in which the full-grown insect, the Imago, appears. But it may be taken *as a general rule* that other specimens of the same insect may be found during the preceding and succeeding months, and therefore if a reader does not find his specimen figured or named under the month in which he caught it, he should refer to the previous and the following months. I hope I may say that in the cases of the common species, he will probably be able to find them named.

It may seem strange to a novice to read of moths being found in the winter time, but the fact remains that a few species are only to be found at that season of the year.

The figures in the following list refer to the numbers on the full-page illustrations, pp. 31, &c.

NOVEMBER

1. THE FEATHERED THORN. *Pennaria*. Sometimes called 'The October Moth.' Ochreous in colour. 2 inches across. Antennae much pectinated. Larva appears in May, and feeds on the oak &c.

2. The Scarce Umber. *Aurantiaria.* 1¾ inches in width. Dull yellowish red. Female apterous, i.e. without wings (a peculiarity we shall notice in many species). Larva appears in May and June, and feeds on oak, birch, &c. Chrysalis buried.

3. The Mottled Umber. *Defoliaria.* About 2 inches across. Fore wings dull yellowish brown, mottled. Female apterous. Larva appears May and June, feeds on blackthorn, &c. Chrysalis buried.

4. The November Moth. *Dilutata.* 1–1½ inches across. Grey, with darker broken lines on fore wings. Female apterous. Larva appears in June, feeding on birch. Chrysalis buried.

All these moths appear also in October. Other moths that may be still abroad or hibernating are Humming Bird Hawk*, Belted Beauty, Northern Winter Gem, Silky Tissue, Parrot Carpet*, Autumn Green Carpet, Sprawler, Plumed Prominent, Yellow Wainscot, Ochreous Brown, Dark Sword Grass, Chestnut*, Dark Chestnut, Redheaded Chestnut, Large Chestnut (Satellite)*, Dotted Chestnut, Orange Upper Wing*, Olive Rustic, Red Sword Grass, Common Sword Grass, Tawny Pinion, Grey Shoulder-Knot, Dark Pinion, Pale Pinion, Herald, December Moth*, and Winter Moth* appear. (Those marked with * are figured under other months.)

December

5. The December Moth. *Populi.* A handsome insect, 1¾ inches. Dark brown, with a purplish tinge, rich tawny edging, wavy pale lines. Larva appears in May and June on poplar, oak, lime, &c.

6. The Winter Moth. *Brumata.* 1–1¼ inches.

Pale greyish brown. Female almost apterous, i.e. possesses only rudimentary wings. Larva appears in May, feeds on hedges. Pupa in slight cocoon hidden in ground. The Early Moth appears also this month.

JANUARY

7. THE EARLY MOTH. *Rupicapraria.* 1–1¼ inches. Grey brown fore wings, slightly patterned. Central blackish spot. Hind wings much lighter. Female apterous. Larva appears in May on blackthorn and similar bushes. Chrysalis buried.
8. PALE BRINDLED BEAUTY.—*Pilosaria* (*Pedaria*). About 2 inches across. Light greyish brown, with darker waved lines. Female apterous. Larva appears in May and June, feeding on oak, whitethorn, &c. Perfect insect continues till end of March.

Winter Moth still to be found: and the moths which hibernate may be found abroad. Larvae to be found feeding on hedge-grass on quiet evenings.

FEBRUARY

9. SPRING USHER. *Leucophaearia.* 1½ inches. Light grey, mottled with darker brown. Female apterous. Larva appears in May and June on oak. Chrysalis is buried.
10. DOTTED BORDER. *Progremmaria* (*Marginaria*). 1½–2 inches. Plain brown, with darker lines, one rather noticeably broad, a satiny gloss on wings. Female apterous. Larvae appears in June on birch, oak, &c. Pupa buried.
11. THE QUAKER (*Stabilis*). Very common. 1¼–1½ inches. Dark brown, light line parallel with edge of fore wings. Appears at end of month, and goes on to April. Larva feeds in June and July on oak and elm. Pupa in an earthen cocoon

About ¾ Life-size.

12. The Clouded Drab. *Instabilis* (*Incerta*). Common species. $1\frac{1}{2}$–$1\frac{3}{4}$ inches. Fore wings dark brown. Hind wings grey. Appears at end of month. Larva in May to June on oak, willow sloe. Pupa subterranean in loose cocoon of earth.

Other moths will be the Small Eggar, Great Oak Beauty*, and March Moth.*

March

13. Brindled Beauty. *Hirtaria*. $1\frac{3}{4}$–2 inches. A rich brown 'tabby,' hind wings lighter in colour. Appears March to April. Larva appears in July and August, on elm, lime, and fruit. Chrysalis buried. Called 'the Cockney,' from its plentifulness in London suburbs.
14. Oak Beauty. *Prodromaria*. 2 inches. Grey, with dark brown marking. Antennae pectinated. Larvae feed in June to August on oak, birch, &c. Pupa underground.
15. March Moth. *Escularia*. $1\frac{1}{4}$–$1\frac{1}{2}$ inches. Grey brown. Female apterous. Larva appears in May, feeds on blackthorn, &c. Pupa subterranean.
16. Pine Beauty. *Piniperda*. $1\frac{1}{4}$–$1\frac{1}{2}$ inches. Handsome red chestnut, upper wings beautifully marbled. Perfect insect appears till May, in pine woods. Larva to be found in July and August, feeding on pine and fir. Pupa underground in cocoon.
17. Hebrew Character. *Gothica*. So called from the curious marking on upper wing. $1\frac{1}{2}$–$1\frac{3}{4}$ inches. February to April. Larva appears in June, feeds on clover, lilac, broom, &c. Pupa in cocoon underground. This species flies by day as well as night.

*Figured under March.

18. Red Chestnut. *Rubricosa.* Upper wings coloured according to its name. 1½ inches. Larva feeds on the dock in June and July. Pupa in cocoon underground.

19. Twin-Spotted Quaker. *Munda.* Unmistakable for the twin spots near the edge of wings. 1½–1¾ inches. Larva appears May and June on elm, willow, &c. Pupa in cocoon below surface.

20. Small Quaker. *Cruda* (*Pulverulenta*). A common species. 1¼–1½ inches. Appears at end of February. Larva in May, feeding on oak. Pupa in cocoon underground.

This month hibernated moths may be found coming to spurge laurel flowers; Drinker Caterpillars, feeding; and the following moths in addition to those mentioned above: Early Thorn, Short Pug, Shoulder Stripe Carpet*, Streamer, Birch Prominent, Yellow-horned, Frosted Green, White-letter Rustic, Clouded Drab*, Northern Drab, Intermediate Drab, Lead-coloured Drab, Bossom Underwing, Green-brindled Clot, Early Grey*. The Kentish Glory and two orange underwings (*Parthenias* and *Notha*) may be seen flying by day.

April

21. White Ermine. *Menthrasti.* 1½–2 inches. White wings with black dots, resembling 'ermine.' Body orange, with black dots down back. A plentiful species. Appears from April to July. Larva appears in August and September, feeds on all varieties of common plants.

22. Common Heath. *Atomaria.* 1 inch across. Yellowish brown, very varigated. Perfect insect, which is a daylight flier, appears from April to June. Larva in June and September, feeds on knapweed and bird's foot trefoil.

*Figured under other months.

23. Brimstone. *Crataegata* (*Luteolata*). $1\frac{1}{4}-1\frac{1}{2}$ inches in expanse. Deep sulphur colour, with few reddish spots on upper edge, &c. Appears also in May and August. Larva has a hump on the seventh segment; appears in June and October, on blackthorn, &c. (See also p. 15.)

24. Early Thorn. *Illunaria* (*Bilunaria*). Greyish brown, marked with darker lines and bars. Appears from March to April: again in September. Larva in June and July, on plum, oak, willow, &c.

25. Purple Thorn. *Illustria*. A handsomely patterned insect. $1\frac{1}{2}-2$ inches across. Appears again in August. Larva in June and September, feeding on beech, ash, oak, &c.

26. Small Engrailed. *Crepuscularia*. $1\frac{1}{2}-2$ inches. Pale grey, freckled and lined with brown and black. May be found on tree-trunks in daytime, March to July. Larva in August and September, feeds on larch, willow, poplar, &c. Pupa concealed in moss.

27. Mottled Grey. *Multistrigaria*. $1-1\frac{1}{2}$ inches across. Coloured as its name implies. Larva appears in May and June, its food-plant being the bedstraw.

28. Double Stripe Pug. *Pumilata*. About $\frac{3}{4}$ inch. Whitish grey, with red tinge. Appears again in July and August. Larva appears in June, feeding on clematis, convolvulus, and wild parsley. Pupa in a cocoon of earth.

29. Scorched Carpet or Shoulder-Stripe. *Badiata*. Very common species. Larva feeds on the rose, in June. Pupa is enclosed in an earthen cocoon.

30. Early Grey. *Lithoriza* (*Areola*). Note the thick-set body. Often found on tree-trunks.

About $\frac{3}{4}$ Life-size.

Larva in July and August, on honeysuckle. Pupa *on* the ground in a cocoon.

31. Silver Y. *Gamma.* So called because on middle of upper wing there is a white mark like the Greek 'γ.' Very common up to end of October. Larva from April to September, on low plants. Pupa in a silken cocoon.

32. Waved Umber, or Bark Moth. *Abruptaria.* Noticeable for the bar of dark brown on lower wings. Antennae pectinated. Perfect insect seen from April to June. Larva in July, feeds on lilac, &c. Pupa attached to stem, in a tough web.

33 Angle Shade. *Meticulosa.* A common species. 2 inches across. Light yellowish brown, which appears from end of April to October. Larva up to November, on low plants. Pupa below earth in cocoon.

34. Nut-tree Tussock. *Coryli.* (See p. 15.) Brown and grey, with black lines. Larva in June.

35. Bordered White. *Piniaria.* $1\frac{3}{4}$–2 inches. Bright brown, with slight fringe of white. Found flying in daylight at tops of trees. April to June. Larva in August and September, feeds on fir. Pupa underground.

36 Garden Carpet. *Fluctuata.* $1\frac{1}{2}$ inches. Grey with brownish patches on upper wings. Appears again in August. Larva in June and September. Feeds on cabbage and other vegetables. Pupa in cocoon of earth.

37. Chocolate Tip. *Curtula.* So called from the broad chocolate tip to upper wings. Appears again in July. Larva in June to September; food-plant, sallow, poplar, &c.

Other moths of the month are: Small Lappet, Pale Engrailed, Grey Carpet, Swiss Pug, Marbled

Pug, Burnet Pug, Common Pug, Brindled Brown Pug, V Pug, Seraphim, Early Toothed Striped, Barred Toothed Striped, Grey Juniper Carpet, Water Carpet, Scarce Kitten, Mullein; at end of month: Spotted Muslin, Scalloped Hazel (see p. 24), Birch Mocha, Mocha, Barred Umber, Netted Mountain Moth, Scalloped Hook-tip, Great Prominent, Lunar Marbled.

May

38. Mother Shipton. *Mi.* A very pretty species, a blackish brown, beautifully marked with light buff lines. 1¼-1½ inches across. Perfect insect appears up to July. Larva, which feeds on clover, in May. Cocoon in moss.
39. Shipton Likeness, or Burnet Companion. *Glyphica.* 1¼–1½ inches. Dark brown upper wings, under wings with patch of yellow-brown. Up to July. Larva in May, feeds on clover, &c. Pupa in a cocoon in moss.
40. Lime Hawk. *Tiliae.* 2–3 inches. The first of a handsome family (*Smerinthus*). Easily identified. Larva appears in August and September, on lime, elm, &c.
41. Wood Tiger. *Plantaginis.* 1½ inches. Fore wings black, with cream streaks and spots. Larva, which hibernates in winter, may be seen from May to September; food-plant plantain.
42. Cinnabar. *Jacobeae.* 1½-2 inches. Flies by day. Black and red fore wings. Hind wings mostly red. Larva in July and August, feeding gregariously on Ragwort.
43. Long Horn Moth, or Green Adela. *Adella Viridella.* One of a species remarkable for the length of the antennae. A bronze green. ½ inch across. Larva feeds on oak in June and July
44. Orange Footman. *Aureola* (*Sororcula*). 1–1¼

inches. Dull yellow. Larva in May and June, feeding on lichens.

45. Cistus Forester. *Geryon.* 1–1¼ inches. Fore wings bronze green. Semi transparent, thick-set body, blunt-tipped antennae. Larva in May and June, on sorrel and cresses.

46. Pale Tussock. *Pudibunda* (*The Hop Dog*). 2 inches. Greyish white or cream; darker wavy bars on fore wings. Larva a most beautiful object, pale green, black bands, and four tufts of yellow, and one red tuft; destructive to hops, from August to October.

47. Peppered Moth. *Betularia.* 1½–2 inches. Grey, speckled all over with dark brown or black. Larvae in August and September, feed on elm, oak, poplar, &c. Pupa to be found underground.

48. Buff Ermine. *Lubricipeda.* (See p. 15.) Like white ermine, but fore wings are buff or cream coloured, and the markings are less dense. Perfect insect appears up to July. Larva in August and September, feeds on many low plants.

49. White Wave. *Pusaria.* (See p. 15.) 1¼–1½ inches. A pure white, with three grey lines. Appears again in August. Larva in June and September, on birch. Pupa in cocoon of earth, or in moss.

50. Beautiful Carpet. *Albicillata.* Plainly identifiable from plate. White with dull chocolate patches. Appears up to July. Larva in September and October, on bramble and raspberry. Pupa among leaves or in earthy cocoon.

51. Silver Ground Carpet. *Montanata.* A very common species, appearing again in August. About 1¼ inches across. Larva in April and May, on primrose. Pupa in earthen cocoon.

52. Common Marbled. *Russata* (*Truncata*). 1½–2

About $\frac{3}{4}$ Life-size.

inches across. Dingy grey, with darker markings. Appears again in August. Larva in May and September, feeding on low plants.

53. Buff Tip. *Bucephala.* An easily identified species, upper wings having a circular tip of shaded buff-colour. Hind wings light cream or buff. Appears up to July. Larva in August and September, on elm, and other trees. Pupa subterranean.

54. Pebble Prominent. *Ziczag.* Dull brown and grey. $1\frac{1}{2}$ inches. Appears up to August. Larva from June to October, feeds on poplar and sallow. (See p. 19.)

55. Coxcomb Prominent. *Camellina.* $1\frac{1}{2}$ inches. A rich brown on fore wings. Appears from May to August. Larva in August to October, feeding on birch, oak, hazel, &c.

56. Dagger. *Psi.* $1\frac{1}{2}$–$1\frac{3}{4}$ inches. Light grey and silvery white: a beautiful but common species, appearing up to August. Larva from August to October, on low plants. Pupa in cocoon in moss or in crevices of bark.

57. Cabbage. *Brassicae.* Very common. May to July. Larva in October, on cabbage and similar plants. Pupa underground in slight cocoon. This species is easily and frequently attracted by a light.

58. The Emperor. *Carpini.* One of the most beautiful species, 2–$2\frac{3}{4}$ inches across. The illustration makes it easy to identify from the remarkable eye spots. The larva is also very handsome: bright green, belted with black, and seven raised spots of yellow, tufted. Appears in August and September, on heath, bramble, apple, &c. Pupa in a remarkable double silken cocoon.

59. Humming-Bird Hawk. *Stellatarum.* (See p. 19.)

2 inches. Is said to fly like a humming-bird. Has a long tongue and proboscis, projecting from head, so that it can feed from flowers while on the wing. Appears from May to October. Often found in gardens hovering over flowers. Larva appears in August and September, on white bedstraw.

This month the moths begin to appear in abundance. Amongst others, are the following: Broad Bordered Bee Hawk*, Apple Clearwing, Birch Clearwing, Yellow Belted Clearwing, Livid Swift, Scarce Forester, Red-Necked Footman, Ruby Tiger, Spotted Muslin, Fox Moth, Little Thorn, Spotted Yellow, Scorched Wing, Ringed Beauty, Square Spot Engrailed, Grey Birch, Small Glass Emerald, Purple Bordered Gold, Small Yellow Wave, Small White Wave, Blomer's Wave, Lace Border, Round Winged Wave, Dingy White, Clouded Silver, Spotted Pinion Wave, Peacock, Tawny-Barred Angle, Latticed Heath, Barred Umber, Drab Looper, Purple Bar, Clouded Border, Horse Chestnut, Mottle Green Carpet, Grass Rivulet, Pretty Pinion. The following Pugs: Netted, Pinion Spotted, Beautiful, Red, Limespeck. Dwarf Beech, Grey, White Spotted, Ochreous, &c., May High Flier; several of the Carpets, especially: Purple-Barred, Bordered Chalk, Bedstraw, Barberry, Red Twinspot, Lesser Satin, &c., Small Waved Umber, Tissue, Phoenix, Chevron; some of the Hook-tips, e.g. Pebble, and Oak, Common Kitten, Alder; several Prominents, such as the Dark, Swallow, Iron, &c., Miller, Sycamore, Large Nutmeg, Mottled Beauty*. Dark Brocade, Broom, Scotch Yellow Underwing, Beautiful Yellow Underwing, Treble Lines, &c. About middle of month, Eyed Hawk*, Poplar Hawk*, Small Elephant Hawk*, Mocha, Dingy Mocha Bell, Great Yellow Underwing, Little Emerald, &c. &c.

* Figured under other months.

59B. Narrow-Bordered Bee Hawk. *Bombyliformis.* 1½–2 inches. Wings transparent like a bee's. Remarkable instance of Protective Mimicry. Larva in July and August, feeds on field-scabion.

June

6C. Poplar Hawk. *Populi.* 3–4 inches. Wings much indented. Dull red-shaded patch at base of hind wings. From end of May to September. Larva green, with seven slanting yellowish lines on sides. Appears in August and September, feeds on poplar, sallow, laurel, &c.

61. Eyed Hawk. (See p. 19.) *Ocellatus.* 2½–3½ inches. Identified by the eyes on the lower wings. A very handsome species, seen from May to July. Larva in August and September, feeding on willow, sallow, poplar, and fruit trees, such as apple.

62. Ghost Swift. *Hepialus humuli.* So called because, owing to the male's white colours on upper side, and dark brown on under side, as it flies at night, it seems to appear and disappear in a spectral manner. The female has dull yellow in place of the white. The larva appears from August onward, hibernating in winter, till following April; feeds on roots of hop, nettle, and burdock.

63. Six-Spot Burnet. *Filipendulae.* 1–1¼ inches. Deep green blue, with six spots of red on upper wing of male. Larva feeds on common rest-harrow in May and June. This is a day-flying insect.

64. Currant Clearwing. *Tipuliformis.* ½–¾ inch across. One of a group which bear close resemblance to some noxious insect—the Hornet Clearwing to the Hornet, Tipuliformis to a Gnat.

ABOUT $\frac{3}{4}$ LIFE-SIZE.

As the name implies, the wings are almost transparent. The larva is a wood-borer, living on the pith of currant-bushes, and may be found in April and May.

65. Common Swift. *Lupulinus*. 1–1½ inches. Dull brown, patterned with white streaks on upper wing. Appears till end of June. Larva from September to April, feeding on roots of common plants.

66. Five-Spot Burnet. *Trifolii*. 1¼–1½ inches. Deep blue green upper wings with five red spots; flies by day. Larva feeds on trefoils and vetches, in May.

67. Scarlet Tiger. *Dominula*. A handsome species, 2–2½ inches across. Fore wings deep bronzed green, almost black, with large cream or white spots. Hind wings scarlet and black. Larva appears in August to May, on nettle, willow, &c; is black, covered with short hairs; pale yellow stripe on back.

68. Grass Emerald. *Cytisaria* (*Priunata*). 1½–1¾ inches. A pale dull green. Larva appears in June and July on the broom. The pupa is in a web, among leaves.

69. Riband Wave. *Aversata*. 1–1½ inches. A dull yellowish grey, with wavy lines of darker grey. Larva appears in April and May, on the common avens. Pupa subterranean.

70. Magpie. *Grossulariata*. A very common and well-known species, plentiful in July and August. Larvae found in May and June, on currant and gooseberry bushes. This species is very variable, and the darker colours and markings being greater or less in different specimens. Those which show very distinct variety are of considerable value to entomologists.

71. Buff Arches. *Derasa.* A beautifully marked insect, light buff with darker shades, and approaching to a reddish hue. 1½–2 inches across. Larva feeds on bramble in July.

72. Common Wainscot. *Palleus.* Fore wings yellow-gold ; hind wings paler. 1¼–1½ inches broad. The perfect insect appears from June to August. Larva in March and April, feeding on grasses.

73. The Dot. *Persicaria.* 2 inches across. Fore wings blackish brown with a curious irregular white dot, in centre of which is a light brown mark. Larva appears in October, feeding on clematis and other plants. Pupa subterranean.

June makes an enormous contribution to the list of British moths, and it is only possible to mention a few here. Privet Hawk*, Large Elephant Hawk*, Oleander Hawk ; Clearwings, such as Swift, Willow, Ruby, Orange, Dusky, Fen Leopard, Wood Leopard. Goat*, Tinsel, Green Forester, Irish Burnet, Trefoil Burnet, Handmaid, Ribbon Bar, Black Arches*, Rose Wing ; Dun, Straw, and Feathered Footman, Clouded Buff, Cream Spot Tiger, Water Ermine, Dark Tussock, Oak Eggar, Lappet, Orange Moth, Pale Emerald, Widower, Great Oak Beauty ; Large, Blotched, and Dark Emerald ; the following Waves : Welsh, Brown, Tawny Red, London, Bone, Silky, Ringed Cream, &c., &c. Carpets, Rivulets, Pugs, Scallops, Wainscots, Rusters, Sharks of many species, Clouded Yellow, Lead Belle, Streaked, Light Arches*, Bird's Wing*, Nutmeg. Turnip*, Heart Moth, Golden Y, Gipsy, Treble Lines (see p. 24), &c.

July

74. Garden Tiger. *Caja.* (See pp. 20, 22.) A very handsome, if familiar, insect. The larva, known popularly as the Woolly Bear, feeds on

*Figured under other months.

nettle; from October to following May or June. This species also varies in markings considerably.

75. Drinker Moth. *Potatoria*. 2½–3 inches. Male dark brown; female, much lighter. A heavily built species. Male has a forked tail. Antennae beautifully pectinated. The larva appears from May to October, feeds on grasses. This is one of those caterpillars whose hairs come off on touch and pierce sensitive skins, producing great irritation.

76. Northern Swift. *Velleda*. Average width 1½ inches. Richly marked brown and orange fore wings; hind wings smoky. Larva in October onwards, feeds on roots of grass, and low plants.

77. Four-Dotted Footman. *Mesomella*. 1–1⅓ inches. A really beautiful insect when inspected closely. Fore wings a dull glossy white, yellow orange rims, two tiny black dots, which alone help to identify the species. The larva feeds on lichens, appearing in May.

78. Four-Spotted Footman. *Quadra*. Male fore wings dull grey, deepening to yellow at root; hind wings paler; female has two distinct black spots on each fore wing, hence name. The larvae appear in May and June, and feed on lichens.

79. Gold Tail. *Auriflua* (*Similis*). 1½ inches wide. Pure satin white, but the tail tuft on abdomen is yellow-gold in colour. The larva appears in May and June, feeding on hawthorn, oak, apple, &c., in companies.

80. Brown Tail. *Chrysorrhea*. Like the above, but the tail tuft is brown. Larva to be found in May and June, on oak, elm, blackthorn. It is gregarious. See also p. 59.

81. Black Arches. *Monacha*. 1½–2 inches. Fore wings white, with well marked dark bars, curves,

and dots. Hind wings smoky. The larva appears in June and July ; food-plant, oak, apple, bramble, fir, &c.

82. Tree Lackey. *Neustria.* A rich yellow-red insect, $1\frac{1}{4}$–$1\frac{1}{2}$ inches across. Very common. Larva in May and June. Food-plant, apple, pear, &c.

83. Swallowtail. *Sambucaria.* $1\frac{3}{4}$ – $2\frac{1}{2}$ inches across. Pale sulphur yellow. A short tail on each hind wing, at base of which are two brown spots. A beautiful but common species, which flies so fast and erratically that it is difficult to catch. Larva in October and November, feeds on oak, bramble, ivy, &c.

84. Scalloped Oak. *Elinguaria.* $1\frac{1}{2}$–2 inches. Cream coloured, a brown spot on each wing, but very faint in hind wings. Larva in April and May, food-plant, white thorn, oak, elm, &c.

85. Mottled Beauty. *Repandata.* $1\frac{1}{2}$–2 inches. Brown grey, much mottled and speckled, three darker lines intersecting. Larva in April or May, on bramble, sloe, &c. Pupa underground.

86. July High-Flier. *Elutata* (*Sordidata*). Very common; brown-grey, marbled. $1\frac{1}{4}$-$1\frac{1}{2}$ inches. The larva in May and June, on sallow, alder, &c. The pupa is found hidden in leaves.

87. Peach Blossom. *Batis.* $1\frac{1}{2}$–$1\frac{3}{4}$ inches. A beautiful and easily distinguished species, with its five discs or splashes of white on fore wings (one only half shown on bottom edge of wing). Larva found in September, feeds on bramble.

88. Marbled Beauty. *Perla.* $\frac{3}{4}$–1 inch. A marbled grey colour. Larva appearing in March to May, feeds on lichens.

89. Frosted Orange. *Flavago*, sometimes called Burdock Moth. $1\frac{1}{2}$-$1\frac{3}{4}$ inches across. A rich

orange base with darker distinct markings on fore wings. This is one of the species easily attracted to light. It appears from July to September. The larva in June, feeding on pith of stem of burdock, thistle, craber letony, &c. The pupa is found *inside* the stem.

90. Ear Moth. *Nictitans.* Often attracted to the lamp. So called from the shape of a light spot on each of the fore wings, closely resembling a human ear. The perfect insect appears from July to September. The larva in May and June, feeding on the roots of grasses. The pupa is in a cocoon of earth.

91. Light Arches. *Lithoxylea.* 1½–2 inches. Very common; drab coloured. To be found in gardens, woods, and hedgerows.

92. Yellow Underwing. *Pronuba.* 2–2½ inches; easily distinguished by its under wings. Common in gardens, woods, rank herbage, from June to August. Larva in April, feeds on all low herbage and plants. Pupa is buried.

93. Death's Head. *Atropos.* (See p. 22.) The largest of our Lepidoptera. 4–5 inches. Known at once by the 'Death's Head' on the body; possesses the unique power of emitting a shrill squeak like the scratch of a slate pencil. The perfect insect appears from end of July to September and October. The larva, a giant when full-fed, is dull yellow, with seven slanting purple stripes. Appears about middle of July to October. Often found in potato fields. Chrysalis buried, sometimes remaining over a year in the pupal state. Food-plant, potato and jessamine.

Amongst many other species to be found this month must be specially mentioned the following, in addition

ABOUT $\frac{3}{4}$ LIFE-SIZE.

to those already named: Hornet Clearwing, Transparent Burnet, Scarce Muslin, Dotted Footman, Common Vapourer*, Oak Eggar, Dotted Beauty, Pale Oak, Amulet, Black Mountain Moth, Essex and Clematis Emeralds, V Moth, Bordered Grey. *Pugs:* Bordered Lime Speck, Ribbed, Bleached, Juniper, Downy, &c. *Carpets:* Pine, Blue-Bordered, Wood, Beautiful Marsh, Netted, &c., Agate, Clouded Spinach, Trebled Barred, Feathered Gothic*, Pearly Underwing, Flame, Dark Sword Grass*. The following Dart Moths: Garden, White Line, Streaked, Portland, &c., Old Lady, Olive, &c.

AUGUST

94. PRIVET HAWK. *Ligustri.* (See pp. 22 and 23.) 3–4 inches. Easily distinguished by its rose-red hind wings, crossed by three black streaks; and its red body with its black bars. The perfect insect appears from June to September. The larva from July to September. The latter feeds on privet, guelder rose, hop, lilac, &c., and often remains in its pupal condition for more than a year! For larva see p. 59.

95. ELEPHANT HAWK MOTH. *Elpenor* [Large]. 2–2½ inches. Fore wings olive-green, with pink intersections; hind wings pink, shading into black at base. Body green and pink stripes. Appears from June to August. Larva in July and August, feeds on willow herb, bed-straw, &c. (See p. 23.)

96. VAPOURER. *Antiqua.* (See p. 9.) 1–1½ inches across. Male, rusty brown wings with one plainly-marked white spot in each fore wing. Female apterous; appears from July to October. Larva in June and September, feeding on pear, nut, and other fruit trees. This species flies by

*Figured under other months.

day. Female lays eggs on a network of silk on the bark of the tree. The egg-clusters may often be found in winter.

97. Pale Eggar. *Crataegi.* 1–1½ inches. Fore wings palish grey, with a broad band of darker hue across. Larva feeds on blackthorn, sallow, and other trees, appearing in May and June.

98. Canary Shouldered or Canary Thorn. *Tiliaria.* 1½–1¾ inches. Fore wings irregular angled in outline, deep yellow, shading off paler at base; may often be caught fluttering round lamp at night. Larva in June; feeds on oak, lime, alder, &c.

99. August Thorn. *Augularia.* 1½–2 inches. Fore wings yellow, with plainly marked brown lines and veins. The larva found in June on oak.

100. Lime Speck. *Centaureata* (*Oblongata*). One of the *Pugs*. About an inch across. White, slightly shaded with grey. A distinct grey blot or patch on upper margin of fore wing. Appears from May to August. Larva in September, feeds on many kinds of plants, e.g. groundsel, knapweed, scabious, ragwort, &c. Pupa pale red in earthy cocoon.

101. Bird's-Wing. *Pinastri* (*Scabriuscula*). 1½–1¾ inches. Dark brown fore wings, the colour ending in an abrupt zigzag line towards lower corner, giving place to lighter brown. The larva, which feeds on sorrel, appears in May. The pupa is hidden in a cocoon on the surface of ground.

102. Feathered Bridle. *Australis.* 1½–1¾ inches. Fore wings grey, with darker markings; hind wings white with a speck of green. Is easily attracted to light. Larva appears in March, on low plants. Pupa subterranean.

103. Feathered Gothic. *Popularis.* 1½–2 inches.

A really handsome moth when inspected closely, with light coloured, plainly marked veins on a darker surface. A small eye spot of same colour, not very plainly discernible. Larva in April and May, feeds on roots of grass. Pupa underground.

104. Straw Underwing. *Cytherea* (*Matura*). 1½–2 inches. Under wing, as name implies, a clear straw colour, with brown edge. The larva appears from October to April, hibernating in winter; feeds on grass tufts. Pupa in cocoon in moss.

105. Lesser Flowered Rustic. *Testacea*. 1½–1¾ inches. Fore wings grey with darker marblings. Hind wings white. Larva in March, on stems of grass. This moth is often seen round a light.

106. Dark Sword Grass. *Suffusa*. Nearly 2 inches. Dark brown fore wings; hind wings much lighter but with distinct dark veins. The hind wings have a distinct purple metallic lustre, when seen in a proper light. Larva appears in May, is a grass-root feeder. Pupa subterranean.

107. Turnip Moth. *Segetum*. 1½–1¾ inches. Grey-brown upper wings, white lower wings with pinkish shade. Found in gardens, hedges, &c. Larva in September to May, on turnips, to which it does great injury, burrowing into the bulb itself; it attacks also other vegetables, e.g. carrot, mangel-wurzel, &c. Pupa subterranean.

108. Broad-Bordered Underwing. *Fimbria*. A handsome insect, 1½–2 inches. Distinguished by the broad, velvety, dark band on the orange of the hind wings. Larva appears in March and April, on primrose, and other plants. Pupa subterranean.

108a. Lesser Broad-Bordered. *Janthina*. 1¼–1½

About ⅔ Life-size.

inches. Like above, but proportionately smaller markings.

109. Grey Arches. *Nebulosa.* 2 inches. A true grey insect, found in woods. Larva feeds on dock and similar plants in April and May. Pupa subterranean.

During August the Privet Hawk-Moth larva is to be found on privet, and the Eyed Hawk on pear, willow, &c. The Lime, Elephant, and Bee Hawks also on their food-plants; Puss Moth on willow and poplar. Look out for the following: Convolvulus Hawk*, Silver-Striped Hawk, Small Footman, Ruby Tiger, Grey Eggar, Grass Eggar, Dusky Thorn, Small Blood Vein, Currant Pug. *Carpets:* Grey, Shaded Broad-Bar, Garden, Barberry, Red Twinspot, Many-Lined, Marbled, &c. *Hook-tips:* Pebble, Oak, Beech, Small Chocolate, &c. *Darts:* Square Spot, White-Lettered, &c., Shepherd's Purse, Orange Sallow, Lemon Sallow, Campion, &c.

September

110. Jersey Tiger. *Hera.* 3–3½ inches. Easily identified by the colours, greenish black on fore wings, curiously striped with cream, and rich scarlet hind wings, patched with black. Occasional specimens are found in England; but its chief habitat is the Channel Islands, where the larva feeds on borage, living through the winter. It is one of the handsomest of British species.

111. Crimson Speckled Footman. *Pulchella.* 1½–1¾ inches. A dainty and exquisite species, known by the colour of fore wings, a creamy white, with five or six irregular lines of black and crimson dots. Appears up to end of October. Not a very common species. The larva, October to April, feeds on field mouse-ear and forget-me-not.

*Figured under other months.

FIG. 130.—WHITE PLUME MOTH (enlarged from life).

FIG. 131.—EGGS OF THE PUSS MOTH.

112. Large Thorn. *Alniaria* (*Autumnaria*). 2 inches. Pale yellow frosted with brown, shading to a deeper colour at tips. The larva appears in June. Food-plant alder, birch, &c.

113. Mallow. *Cervinaria*. $1\frac{1}{4}$–$1\frac{1}{2}$ inches. Light brown with darker markings. Larva feeds on mallow and hollyhock, and is to be found in June and July. Pupa subterranean.

114. Lesser Lute-String. *Diluta*. $1\frac{1}{4}$–$1\frac{1}{2}$ inches. Pale greyish brown, with darker irregular markings. Larva in June, on oak, &c.

115. Pearly Underwing. *Saucia*. $1\frac{1}{2}$–2 inches. Distinguished for the pearly lustre on hind wing. The larva appears in November, and feeds on dock and plantain. Pupa underground.

116. Beaded Chestnut. *Pistacina*, sometimes called 'Pale-headed Chestnut.' Chestnut upper wings, with a few darker specks. Larva in May and June, on dock. Pupa subterranean. $1\frac{1}{2}$–$1\frac{3}{4}$ inches across.

117. Lunar Underwing. *Lunosa*. Silver-grey hind wings. 1–$1\frac{1}{4}$ inches. Found in woods. Larva feeds on grass, in April. Pupa underground.

118. Orange Upperwing. *Croceago*. Orange-yellow fore wings; almost white satiny hind wings. $1\frac{1}{2}$–$1\frac{3}{4}$ inches across. The perfect insect is found at the end of September onwards through winter (hibernating) till April. Larva to be found in May and June, on oak. Pupa subterranean.

119. The Sallow. *Cerago* (*Flavago*). Delicate golden yellow upper wings, with deeper markings. Hind wings sheeny white. Larva in April and May, feeds on the catkins of the sallow, and also on low plants. Pupa subterranean.

Naturally in September the number of moths grows considerably less, but besides those named the

FIG. 132.—PUSS MOTHS, NEWLY EMERGED FROM PUPA-CASE.

FIG. 133.—GOAT MOTH, ON TOP OF PUPA-CASE, JUST EMERGED.

following also appear: Grey Eggar, Common Thorn, Parrot Carpet*, Autumn Green Carpet, Red-line and Yellow-line Quakers, Chestnut*, Dark, Large, Dotted Chestnuts, Olive Rustic, Marvel de Joue*, &c.

October

120. Goat Moth. *Ligni perda.* (See Frontispiece). 3–3¾ inches: so called from the smell of the larva, which is, when full fed, a monstrous creature, mahogany coloured, feeding on decaying wood, especially willow and poplar. The perfect insect is often found earlier, from July onwards. The larva in September and October. It sometimes remains as a pupa for two or three years, in the wood. See Fig. 133.

121. Puss Moth. *Vinula.* A beautiful insect of grey and white, with delicate darker markings. The larva is unique, with a curious 'mask' and a pair of whips at its tail; it erects its mask when alarmed, and can eject a subtle liquid from its 'whips.' I have had my eyes inflamed and irritated by this liquid, when stooping too close to the creature. It feeds on willow, poplar, &c. The pupa is encased in a very hard cocoon, attached to the bark of the tree. See Figs. 131, 132.

122. Convolvulus Hawk. (See p. 24.) *Convolvuli.* 3¾–4¾ inches. Rarely found in England, but once fairly common. Not so handsome as other hawk moths, the colours being grey and brown. So named because its larva feeds on the bindweed, or convolvulus minor, in July.

123. Parrot Carpet. *Psittacata* (*Siterata*). Another of the large group of Carpets, so called from the fancied resemblance of their markings to the pattern of a carpet. 1–1¼ inches.

*Figured under other months.

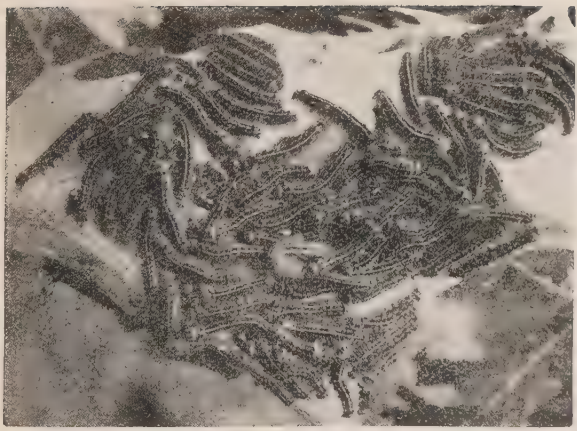

FIG. 134.—COLONY OF BROWN-TAIL LARVAE ON THEIR WEB.

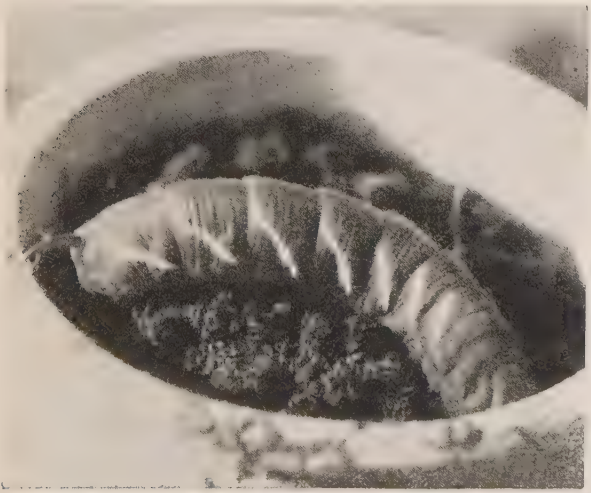

FIG. 135.—FULL-FED LARVA OF PRIVET HAWK BURYING ITSELF.

124. The Streak. *Spartiata.* Easily identified by the streak of white colour along upper part of fore wings. 1½ inches. Larva is found in June, feeding on broom.

125. Chestnut. *Vaccinii.* 1½ inches. The insect continues through winter to February and March. Larva in June and July, on oak, as well as on low plants. Pupa subterranean. This species is a rich chestnut colour on fore wings, as its name implies.

126. Satellite. *Satellitia.* 1½–1¾ inches. Similarly coloured to foregoing, but larger. Survives through winter to about March. Larva in May and June, on oak, beech, elm, &c.

127. Black Rustic. *Nigra.* 1¾ inches. Blackish fore wings, with curious small light mark just out of centre. Hind wings light grey, shading to brown at edges. Larva in October, and through winter to June; feeds on chickweed, dock, &c. Pupa subterranean.

128. Marvel de Joue. *Aprilina.* A truly beautiful species. 1¾–2 inches. Fore wings pearly grey, with exquisite markings and shadings. Hind wings darker grey. Larva appears in June, on oak. Pupa in ground, enclosed in an earthy cocoon.

129. Brindled Crescent. *Oxyacanthae.* 1½–1¾ inches. Found in gardens, hedgerows, woods, &c. The larva in June and July, on hawthorn and sloe. Pupa in cocoon of silk and earth.

Other moths of the month are: Death's Head*, Feathered Thorn*, Golden Umber, Mottled Umber*, Northern Winter Moth, November Moth*, Juniper Carpet Sprawler, Plumed Prominent, &c.

* Figured under other months.

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